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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/217,633	12/22/1998	MASAHARU NAKAMORI	0505-047P	4151

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EXAMINER

TRAN, HIEN THI

ART UNIT PAPER NUMBER

1764

DATE MAILED: 10/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/217,633	<b>Applicant(s)</b> NAKAMORI ET AL.	
	<b>Examiner</b> Hien Tran	<b>Art Unit</b> 1764	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 August 2005.  
 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 8,13-15,18-20, 23-24 and 32-34 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 8,13-15,18-20,23,24 and 32-34 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 15, 18-19, 32-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically, in claim 15, the newly added limitation is nowhere disclosed in the original specification, since figs. 3-4 and page 4, table 1, only support for Mo range of 1.2 wt% and P range of 0.03 wt%.

In claim 33, the P range is nowhere disclosed in the instant specification. See claim 34 likewise.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 8, 13-15, 18-20, 23-24, 32-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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In claim 8, line 19 "said cylindrical case" lacks positive antecedent basis. See claims 15, 20 likewise.

In claim 15, it is unclear as to where the newly added limitations are disclosed in the original specification.

In claim 33, it is unclear as to where the "0.3%" is disclosed in the original specification; also it is unclear as to whether the phosphorous content is the same as to the phosphorous content set forth in claim 15, and how the phosphorous content can be 0.3 wt% if the phosphorous content is 0.03 wt% as set forth in claim 15. See claim 34 likewise.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 8, 13-15, 18-20, 23-24, 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whittenberger et al (5,651,906) in view of Miyazaki et al (5,792,285), Arai et al (5,151,254), and either Toyoda et al (5,336,472) or Maus (4,713,361).

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Whittenberger et al discloses a catalytic converter comprising:

a honeycomb structure shaped in a cylindrical form, said honeycomb structure having a plurality of channels (i.e. air vents) extending in an axial direction thereof; and

a cylindrical case covering an outer peripheral surface of the honeycomb structure wherein the case is composed of stainless steel.

The apparatus of Whittenberger et al is substantially the same as that of the instant claims, but fails to disclose whether the stainless steel case may be ferritic stainless steel case containing Mo and phosphorous (P).

However, Miyazaki et al discloses the conventionality of using ferritic stainless steel containing 0.1 - 3.0 wt% of Mo and 0.025 - 0.1 wt% of P for constructing converter housing due to its excellency in stress corrosion cracking resistance and oxidation (see, for example, col. 4, lines 58-65; col. 5, lines 28-48).

It would have been obvious to one having ordinary skill in the art to use the ferritic stainless steel containing Mo and P as taught by Miyazaki et al as an alternate material for the converter housing in the apparatus of Whittenberger et al, if not inherent therein, for an improved stress corrosion cracking resistance and high temperature oxidation resistance thereof and since use of such is conventional and no cause for patentability here.

Since Miyazaki et al discloses the stainless steel containing 0.1 - 3.0 wt% of Mo and 0.025 - 0.1 wt% P, such ranges encompass the range of 0.3 to 2.5 % Mo and 0.03 wt% P recited in the instant claim 15 or the 1.2 wt% of Mo and 0.03 wt% of P recited in instant claims 8, 20, 32.

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Selecting the specific percentage of Mo and P is within the purview of one having ordinary skill in the art during routine experimentation and optimization of the system of Whittenberger et al based on the teachings of Miyazaki et al.

Since the modified apparatus of Whittenberger et al discloses stainless steel for both casing and honeycomb structure, both casing and honeycomb structure inherently have the same coefficient of linear expansions as that of the instant claims.

With respect to outermost air vent, Toyoda et al and Maus disclose the conventionality of providing the catalytic honeycomb carrier in which the outermost air vents of the catalytic carrier are formed by cooperation of an entire surface of the case and a waved plate of the honeycomb carrier (note the Figure in Maus and col. 5, line 19-23 in Toyoda et al).

It would have been obvious matter of design choice to alternately locate the waved plate at the outermost surface since such a modification would have involved a mere substitution of known equivalent structures as evidenced by Toyoda et al and Maus. A substitution of known equivalent structures is generally recognized as being within the level of ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958).

With respect to the limitation of a catalyst layer formed on an inner surface of the case, Arai et al discloses provision of coating a catalyst layer on the inside surface of the casing (col. 6, lines 39-42).

It would have been obvious to one having ordinary skill in the art to coat the catalyst layer on the inside surface of the casing of Whittenberger et al so as to increase the exhaust gas cleaning effect as taught Arai et al.

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With respect to properties regarding the temperature, time, moisture added atmosphere and oxidation increase as set forth in claims 8, 15, 20, Miyazaki et al discloses that their ferritic stainless steel has excellent oxidation resistance as it shows no abnormal oxidation at high temperature, such as 830 ° C for 20 hrs in atmospheric air (col. 13, lines 23-36). Although Miyazaki et al is silent as to the specific oxidation resistance percentage of the stainless steel, Miyazaki et al discloses the ferritic stainless steel containing the same weight percentage of Mo and P as that of the instant claim thereof and therefore the stainless steel of Miyazaki et al possesses the same properties thereof.

With respect to the specific percentage of P in claims 33-34, as discussed in the 112 rejection above, the newly added claims introduce new matter. Therefore, the difference between applicants' claim carrier and that of the prior art cannot be identified by the specification of the instant application.

As best understood, one having ordinary skill in the art would have routinely optimized the amount of P content in the ferritic stainless steel in the system to obtain the desired workability of the stainless steel sheet thereof (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), and since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233).

8. Claims 8, 13-15, 18-20, 23-24, 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honma (5,323,608) in view of Miyazaki et al (5,792,285), Arai et al (5,151,254), and either Toyoda et al (5,336,472) or Maus (4,713,361).

Honma discloses a catalytic converter comprising:

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a stainless steel honeycomb structure 14 shaped in a cylindrical form, said honeycomb structure having a plurality of channels (i.e. air vents) extending in an axial direction thereof; and

a cylindrical case 12 covering an outer peripheral surface of the honeycomb structure wherein the case is composed of stainless steel (col. 2, line 58 to col. 3, line 30).

The apparatus of Honma is substantially the same as that of the instant claims, but fails to disclose whether the stainless steel case may be ferritic stainless steel case containing Mo.

The same comments with respect to Miyazaki et al, Arai et al, Toyoda et al, and Maus apply.

#### ***Response to Arguments***

9. Applicant's arguments with respect to claims 8, 13-15, 18-20, 23-24, 32-34 have been considered but are moot in view of the new ground(s) of rejection.

Applicants argue that Miyazaki et al fails to disclose the 1.2 wt% Mo and 0.03 wt% P as that of the instant claims. Such contention is not persuasive as Miyazaki et al discloses the conventionality of using ferritic stainless steel containing 0.1 - 3.0 wt% of Mo and 0.025 - 0.1 wt% of P for constructing converter housing due to its excellency in stress corrosion cracking resistance and oxidation resistance (see, for example, col. 4, lines 58-65; col. 5, lines 28-48).

In response to applicant's argument that the examiner has combined an excessive number of references, reliance on a large number of references in a rejection does not, without more, weigh against the obviousness of the claimed invention. See *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991).



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***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien Tran whose telephone number is (571) 272-1454. The examiner can normally be reached on Tuesday-Friday from 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1454. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Hien Tran*

**Hien Tran  
Primary Examiner  
Art Unit 1764**

HT  
October 26, 2005